

# Multi-Component Remediation System for Generating Potable Water Onboard Spacecrafts, Phase I

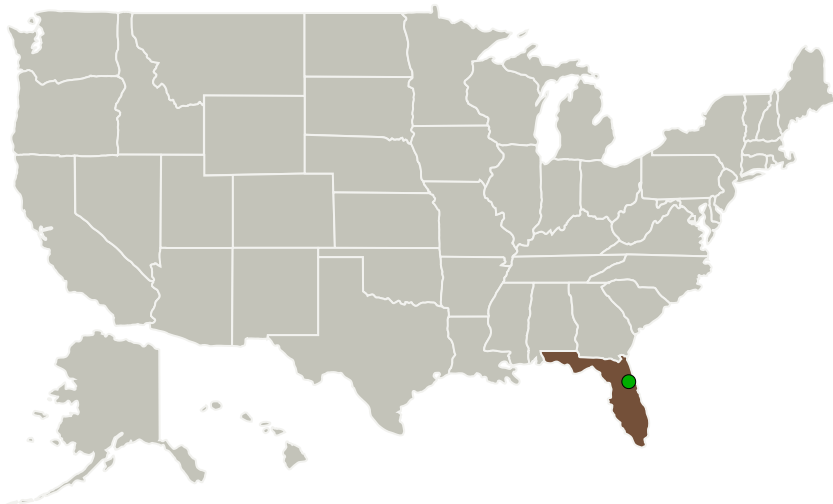
Completed Technology Project (2010 - 2010)



## Project Introduction

Fractal Systems Inc. proposes to develop an innovative, energy-efficient water purification system to enable humans to live and work permanently in space. Water recovery in space is essential to produce potable and hygienic water from wastewater generated onboard spacecraft. In phase I, we will demonstrate feasibility of a new and highly efficient method that will combine several technologies based on high surface area nanoparticles in one compact, portable filtration/remediation system for generating potable water. In Phase I, we will fabricate, characterize and test each component with respect to its remediation efficiency. The proposed effort is based on in-house work and developed devices. This effort will be conducted in collaboration with academia and industry partners to achieve a viable technology that will be developed further in Phase II and result in a complete system as a Phase II deliverable, which will be used by our industrial partner, a water purification company, for commercialization purposes. Our purification system will be easy to handle, very cost effective and free from chemical by-products.

## Primary U.S. Work Locations and Key Partners



Multi-Component Remediation System for Generating Potable Water Onboard Spacecrafts, Phase I

## Table of Contents

Project Introduction	1
Primary U.S. Work Locations and Key Partners	1
Project Transitions	2
Organizational Responsibility	2
Project Management	2
Technology Maturity (TRL)	2
Technology Areas	3
Target Destinations	3

# Multi-Component Remediation System for Generating Potable Water Onboard Spacecrafts, Phase I

Completed Technology Project (2010 - 2010)



Organizations Performing Work	Role	Type	Location
Fractal Systems, Inc.	Lead Organization	Industry	Belleair Beach, Florida
● Kennedy Space Center(KSC)	Supporting Organization	NASA Center	Kennedy Space Center, Florida

## Primary U.S. Work Locations

Florida

## Project Transitions

**January 2010:** Project Start

**July 2010:** Closed out

### Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/139253>)

## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Organization:

Fractal Systems, Inc.

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

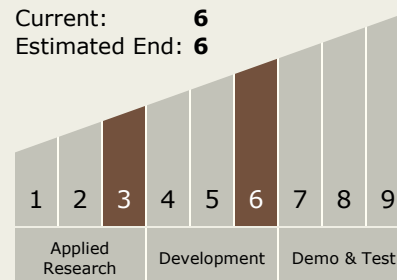
Carlos Torrez

### Principal Investigator:

Matt Aldissi

## Technology Maturity (TRL)

Start: 3  
Current: 6  
Estimated End: 6



# Multi-Component Remediation System for Generating Potable Water Onboard Spacecrafts, Phase I

Completed Technology Project (2010 - 2010)



## Technology Areas

### Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - └ TX06.1 Environmental Control & Life Support Systems (ECLSS) and Habitation Systems
    - └ TX06.1.2 Water Recovery and Management

## Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System